

out their researches in the Arctic Regions, and he hoped that the English Government also would be induced to authorise the despatch of a vessel, if not to co-operate with those of other countries, at any rate to share in the great and useful work.

The PRESIDENT, in concluding the proceedings, wished to remark that there had been one omission in the arguments which had been adduced in favour of England prosecuting further researches in the direction of the North Pole. Next to Russia, England was the greatest Arctic Power in the world. Though from the happy absence of crime in that neighbourhood the Canadian Government had not had occasion to establish judges there, it should not be forgotten that the Queen's writ now runs to the North Pole, and the least that a country could do was to examine its territorial boundaries.



The Mountain Passes on the Afghan Frontier of British India.

By C. R. MARKHAM, C.B., Secretary R.G.S.

Map, p. 80.

THE ranges of mountains which form the north-west frontier of British India compose a system which may be separately studied, although they are connected by an unbroken water-parting with the Hindu Kush and the outer Himálaya.

The mountains of the Hindu Kush are the boundaries of the Afghan valleys on one side, whence the Kabul River flows direct to the Indus, and the river of Kandahar to its inland receiving lake. On the other side are the Sulimani mountain ranges, which (considered as one system) present an unbroken line completely separating the drainage of the Afghan valleys from that of the Indus.

A ridge, forming the water-parting between the Ghazni and Kabul basins, shoots off from the Hindu Kush, and its continuation, running east and west, forms the lofty range of the Safid-Koh. The River Kabul washes its northern base, and its long parallel spurs extend to the Indus.

The Safid-Koh is the northern portion of the system which forms the subject of the present paper. Its limit in a northerly direction is the right bank of the Kabul River. From the southern face of that range, a system of mountains, with parallel ridges and many spurs, extends in one continuous line to the Arabian Sea, and forms the north-western boundary of British India. It is generally known as the Sulimani Range, but it includes more than one chain, and a closer study of its general features will show the necessity for a stricter definition of its several parts.

Like the Himálaya, the Sulimani system consists of an inner chain on which most of the rivers flowing to the Indus rise, with a continuous unbroken ridge, a central chain, and an outer chain, with lofty peaks and deep gorges, through which the rivers force their way into the Indus plain. The country between these chains consists of numerous transverse and parallel ridges and valleys, and several remarkable plateaus; and in some parts of the outer line there are indications of a formation



THE
SULIMANI MOUNTAINS
ON THE
AFGHAN FRONTIER
OF
BRITISH INDIA

Based on Major Wilson's map, collated with other sources.

SCALE OF ENGLISH STATUTE MILES.
0 10 20 30 40

Ab. (River), R. (River), N. (Watercourse), Khel, (Land),
Kot, P. (Pass), Kila, Kala, K. (Castle, Fort), Khan, (Village)

analogous to the Dhúns and Sewaliks of the Himálayan system. The easternmost or outer chain, rising from the plains of India, is known as the Koh-i-Surkh or red range, and the inner chain is called the Koh-i-Siyah or black range. The famous peak of Takht-i-Suliman, or "throne of Solomon," is on this outer range, and the name of Sulimani should, therefore, be applied to it; while the inner range, forming the water-parting between India and the inland Afghan valleys should, for the sake of precision, have a distinct name. It commences from the Safid-Koh, and runs in a general north and south direction to the lofty peaks of Tukatu, overlooking the Bolan Pass. It has been proposed to give the name of Jadran to this inner range, in accordance with the views of Captain Broadfoot. That distinguished explorer gave this name to what he calls the chief of the Sulimani Chain, which he himself saw joining the last roots of the Safid-Koh, and he held that it continued, under different names, to near Kwatah (Quetta). The name is derived from the wild Jadrans who occupy part of the eastern slopes. But, on the whole, and keeping in mind the analogy of the Himálayan system, it will be most conducive to clearness and accuracy of statement, if we adopt the terms western and eastern Sulimani, for the inner and outer chains respectively.

South of the Bolan Pass, the mountain range continues to the Arabian Sea at Cape Monze, a distance of 350 miles. Pottinger, on his map, called this chain the Brahuik Mountains, the Brahuis forming an important part of the population of Baluchistan. Mr. Hughes has used the same nomenclature in his recent work on Baluchistan. But the term "Hala Mountains" appears to have been more generally adopted, and will, therefore, be used in this paper.

The mountain region which will be the subject of our study and discussion, consists of the Safid-Koh Range, running east and west from the Hindu Kush to the Indus; of the three parallel chains of the eastern, central, and western Sulimanis, running north and south from the Safid-Koh to the Bolan Pass; and of the Hala Mountains extending thence to the Arabian Sea at Cape Monze. The mountains are inhabited by Pathan or Afghan tribes in the northern, and by Baluch tribes in the southern part; the whole of the Hala Range, and part of the eastern Sulimani north of the Bolan Pass, being occupied by the latter.

Our knowledge of this mountainous region is still very imperfect, and is mainly derived from the narratives of travellers who have crossed it at a few points, and from the reports of officers accompanying expeditionary forces. It is necessary to piece together the scattered information so as to bring it into one focus, and to make some approach to systematic arrangement of existing materials, if we would acquire a general knowledge of the important region under discussion. With this object I propose to commence from the northern extremity on the right bank of the Kabul River, and to make a contribution towards describing each

pass, and the locality of each tribe from north to south, until we reach the southern extreme of the Hala Mountains. At best our view will be incomplete, and in some places hazy and doubtful; but it will be an honest, and therefore useful, attempt to take stock of the knowledge we now possess.

The Sulimani Mountains are interesting, not only from their geographical importance, but from the historical associations attaching to them, and from their having contained, in all ages, the gates to the rich empire of India. The plants, on their eastern slopes, yielding the sacred soma juice, and wood mentioned in the Rig Veda hymns, bear silent but unerring testimony to the roads by which the earliest Aryan settlers found their way into the valley of the Indus. It was along the perilous route on the northern face of the Safid-Koh that the early Chinese pilgrims reached the revered sites of Gautama's ministrations, and by the same way Alexander and his Greeks marched to the conquest of the Punjab. In November, 1001, Mahmud of Ghazni came down the valley of the Kabul River with ten thousand horsemen; and he returned to Ghazni by a more southern pass. Muhammad Ghorî traversed the defiles of the Sulimani in 1191, and his lieutenant Ilduz kept the road open from the Indus to Ghazni by the Kurram Pass. Down the self-same pass the heroic prince Jalâlu-'d-Dîn of Khuwârizm was hunted by Chingiz Khan, and driven into the Indus; and the conquering Timur also used the Kurram route for his invasion of India. Baber, the founder of the dynasty of the "Great Moguls," traversed the Khaibar and the Gomul. He knew most of the passes, and was the first geographer among the conquerors of India. His topographical descriptions are masterly, and Captain Broadfoot, who followed on several of his tracks, only once thought that he had detected him indulging in oriental exaggeration.* Baber's descendants at one time turned the current of invasion in the opposite direction, and scaled the Sulimani Mountains with aggressive armies collected on the plains of India. Thus, a son of the Emperor Shah Jehan marched up the Sanghar Pass to Kandahar; but the tide soon turned again, and in the last century Nadir Shah and Ahmed Durani led conquering hordes down the Khaibar and Bolan passes. In our own day we once more see the rulers of India advancing up from the plains to the mountain *subahs* of Afghanistan, which were included in the empire of their predecessors, to avert the possibility of another invasion of Hindustan by the gates of the Sulimani Range.

The extraordinary historical interest thus attaching to this mountain

* Baber visited the shores of the Lake Abistada, and he says that the number of waterfowl was innumerable, and that a reddish tinge was given to the mass when they turned their wings in the air. When Broadfoot passed by the lake he saw few or no birds, and therefore suspected the royal author of exaggeration. But Masson, who also visited Lake Abistada, says that there were vast numbers of birds, and moreover that they had red legs; which is a remarkable corroboration of Baber's narrative (i. p. 261).

frontier enhances the importance of systematising and arranging the geographical knowledge connected with it. The range also presents certain peculiarities from its position, which make its examination specially desirable for the furtherance of several branches of scientific investigation in their relations to geography. For instance, as regards botany, the exploration of the Sulimani Mountains will tend to show the relative distribution of members of the Persian and Indian *floras* which lie on either side of them; and the same interest attaches, for similar reasons, to researches in zoology. Beyond the collection of a few fossils in the nummulitic limestones, and the hasty descriptions of rock formations by passing travellers, the geology of the range is unknown.*

The Safid-Koh, its Spurs and Defiles.—We will now commence our survey of the region with the Safid-Koh Range, and the spurs from it to the north and east, including the Khaibar and Karkacha passes. We are able to do so under very efficient guidance, for this country has been described by Elphinstone and Macartney; was explored by Burnes, Leech and Lord, by Lieutenants Wood and Mackeson, by Moorcroft, Vigne and Masson, and was traversed by the forces of Wade, Pollock, and Nott.

The Safid-Koh Range, rising out of the high table-land which separates the Kabul and Ghazni basins, follows the 34th parallel of latitude for about a hundred miles, then sends one arm to the north-east, terminating on the Kabul River, which makes a great curve northwards to flow round its base. The main range continues eastward to the Indus between Kohat and Peshawur. The highest peak is the Sikaram† Mountain, 15,622 feet above the sea, whence the range preserves a tolerably uniform level, perhaps nowhere less than 12,500 feet, until it again culminates in a double-peaked mountain, whose summit average is 14,800 feet.‡ The first northern spur of the Safid-Koh is the water-parting which divides the valley of the Logar River from that of the

* Vigne says that it consists of recent formations, principally sandstone and secondary limestone; and that the fossiliferous portions contain ammonites and marine remains. The strata, he adds, are much shattered and contorted, and often overlaid by shingle or debris. A few nummulites were exhibited at the Punjab Exhibition of 1864 from the Derah Ghazi Khan district. The natives relate that the larger fossils are the petrified clothes of fifty betrothed virgins. They were once surprised while bathing by their future husbands. They prayed heaven to grant them a covering, and in answer to their petition the earth swallowed them up, and their clothes became stones. There were also belemnites, and several species of echinus, at the Exhibition. Dr. Fleming described the nummulitic limestones of the Sulimani Range, above the Derajat, in the 'Quarterly Journal of the Geological Society,' ix. p. 346.

The Trans-Indus Salt Range was surveyed by Mr. Wynne of the Geological Survey, accompanied by Dr. Warth, in 1873; and Dr. Waagen examined the relations and mode of occurrence of the fossils in the Salt Range.

† Or Sitaram.

‡ Colonel Walker, 'B. G. S. J.,' 1862.

Khurd Kabul. Here is the defile of evil fame, commencing about 10 miles east of the city of Kabul, 6 miles long, with a width of 100 to 200 yards, and high mountains on either side, the road crossing the stream which flows down it twenty-three times. When Sir Robert Sale forced it in 1841, it was defended by 200 Ghilzis, and he lost 67 men; while on the 8th of January, 1842, the retreating garrison of Kabul, under General Elphinstone, was attacked at the head of the defile; a panic ensued, baggage and arms were abandoned, and 3000 souls are believed to have perished.

The next northern spur from the Safid-Koh is crossed by the Tangi Takhi Pass, and the next is crossed by the Haft Kotul Pass. The latter name signifies "seven passes," and the pass is about three miles long. Here Sale fought a gallant and successful action, here the massacre of the retreating garrison of Kabul was continued, and here the Afghans were defeated with great slaughter by General Pollock, in September, 1842. Next comes a higher range, forming the boundary of the Tezin Valley, which is called by Wood the Karkacha Range. It extends to the right bank of the Kabul. That river separates it from a chain on the opposite side, which may be traced from the outskirts of Kafiristan, above Swat and Khagan, in continuation of the Himálaya in Kashmir. Thus the Karkacha may perhaps be considered as a connecting link between the Himálaya and Sulimani ranges. The Tezin River has a northerly course, from the Safid-Koh to the Kabul, of about 40 miles. It flows through a valley which is partly cultivated, and four passes lead from it over the Karkacha Hills, namely, the Karkacha, the Sokhta, the Chinar, and the Lataband. The Lataband Pass, which was used by Sir A. Burnes in 1832, is 6 miles long. It turns the Khurd Kabul, and the city of Kabul is in sight from its summit. The Karkacha Pass is the highest and most southerly,* being nearly 8000 feet above the sea. It was explored by Lieutenant Wood in September, 1837, who followed up the bed of a stream called the Hisarak until it contracted to a narrow defile 10 feet wide, the sides of which were naked, craggy, and precipitous. From the summit of the pass there is a glorious view of the mountain chains round Kabul, and the slopes are covered with almond-trees and wild flowers. The mountains are of blue slate. In the Tezin Valley Sir Robert Sale defeated an Afghan force on 22nd October, 1841, when on his march to Jalalabad. The remnant of the retreating garrison of Kabul, under Brigadier Shelton, reached Tezin on the 11th of January, 1842; and here General Pollock fought an action on the 12th of September, 1842.

The narrow and winding defile of Jagdallak,† in which the last remnant of the Kabul garrison was massacred on the 12th of January,

* In Wood's 'Oxus' there is a misprint of northerly for southerly.

† Colonel Yule identifies the "Ghideli" of Benedict Goes, and the "Djeguid-Ali" of Forster with Jagdallak. 'Cathay,' &c., ii. p. 556 (n).

1842, constitutes the first passage over the Karkacha, and leads to the three more northern passes over that range.

Between the Karkacha and Khaibar ranges there is an extensive valley, bounded on the south by the lofty Safid-Koh, on the north by the Kabul River, and intersected by lower hills. It is about 80 miles long by 35, and in many parts is highly cultivated. Jalalabad, surrounded by fields and fruit-gardens, stands near its midst, and several streams, the chief of which is the Surkh-rud, flow across it to the Kabul. The district including the slopes in the southern part of the valley of Jalalabad is called Nangnahar, not, as Lieutenant Wood supposed, because it contains nine rivers,* for the word is, as Colonel Yule explains, but a corruption of the ancient Indian name Nagarahâra (the Nagara of Ptolemy), written in Baber's time Nagarhâr. Baber also calls it Adinapur,† and the plain is the *Germisil* or hot, as distinguished from the *Serdsil* or cold country. In 1508 Baber made a garden at Adinapur. To the westward of Jalalabad, on the north side of the Kabul, is the small district of Lamghan or Laghman, surrounded by mountains; and it was through it that the Chinese pilgrim Hionen Tshang approached India, crossing the Kabul River opposite Jalalabad. This seems to have been a usual route, for the Emperor Baber, in his 'Memoirs,' mentions, among four roads which lead from Kabul to Hindustan, "one by way of Lamghanat, which comes by the hill of Khaibar, in which there is one short hill pass." Thus the route appears to have followed the left bank of the Kabul through Lamghan, then to have crossed the river at Jalalabad, and entered the Khaibar defile. Masson made an excursion to Lamghan, crossing the river near Jalalabad.‡ East of Jalalabad a spur from the Safid-Koh stretches out to the River Kabul, and is crossed by a pass called the Khurd-Khaibar opposite to Lalpura. Two miles from the entrance of the Khaibar defile are the two villages and fort of Daka (1404 feet above the sea), about half a mile from the right bank of the Kabul; while on the opposite shore is the town of Lalpura, the chief place of the Mohmand tribe. A ferry of boats, and a difficult ford, when the river is low, connect the two places.

East of the Jalalabad Plain is the Khaibar Range, joined by a ridge to the northern face of the Safid-Koh. The range goes north for 15 miles, then spreads east and west, with spurs to the Kabul River, having a length of 35 and a width of about 15 miles. The connecting ridge is only 3400 feet above the sea, but the chain rises again in the Tartara Peak (6800 feet above the sea), which overlooks the Kabul River, and the valley of Peshawur. Two streams rise on the connecting ridge, one flowing north-west to the Kabul River, the other south of east to the

* Wood's 'Oxus,' p. 105, 2nd ed.

† Masson identified the site of Adinapur (i. pp. 182, 183).

‡ Masson, iii. pp. 285, 297.

Peshawur Valley at Jamrûd. The beds of these streams form the Khaibar Pass. The actual eastern entrance of the Khaibar defile is at Kadam, 3 miles beyond Jamrûd, where the hills close in on either side, and the width of the pass is 450 feet. Further on it narrows to 190 and then to 70 feet, and at Ali Masjid the width of the pass is 150 yards, with almost perpendicular sides. Ali Masjid (2433 feet above the sea) is a fort built on a conical hill 600 feet high, on the south side of the pass. Here the water is clear but unwholesome, owing to being impregnated with antimony. Ali Masjid is 8 miles from the entrance of the pass, 26 from Peshawur, and 67 from Jalalabad. Further on, in the Lalabeg Valley, the pass widens to a mile and a half, but it closes in again to a narrow gorge with precipices on either side, before the Landikhana Pass is reached on the connecting ridge (3373 feet), whence the descent is easy to Daka in the plain of Jalalabad, which is 1404 feet above the sea. The whole distance through the Khaibar Pass, from Jamrûd to Daka, is 33 miles, with an easy gradient along the torrent beds, practicable for carts all the way. But there is danger of sudden rains in July and August, and also in December and January, when the roadway is converted into a torrent. Lieutenant Wood tells us that, when he was in the pass, the waters came down so rapidly, and the little rill swelled so quickly into an impassable stream, that the party was divided, some having sought shelter on the right and others on the left bank.

The Khaibar Pass, as we have seen, was that used by Alexander the Great, by Mahmud of Ghazni, by Baber on more than one occasion, and by Nadir Shah; and to every invading army the Afridi mountaineers gave serious trouble if they were not bought off. By this perilous road came Benedict Goes, Forster, and many an earlier wayfarer; by it travelled Moorcroft, Masson, and Vigne; and in 1837 Burnes, Lord, and Wood. In 1839 it became the scene of operations of British troops. On the 22nd of July, Colonel Wade, with an army of 10,000 men, entered the pass and captured the fort of Ali Masjid on the 27th, after an encounter, in which the British loss was 22 killed and 158 wounded. He met with no further opposition. A strong post was left at Ali Masjid; and another under Lieutenant Mackeson near Daka, to keep open communications with Peshawur. When Jalalabad was blockaded, it was proposed to send a force to the relief of Sale's garrison. On January 15th, 1842, Colonel Moseley reached Ali Masjid, but Brigadier Wilde, who followed him, was repulsed with heavy loss. Moseley was then forced to fight his way back through the pass, with a loss of 32 killed and 157 wounded. General Pollock advanced on April 6th, 1842, and was fiercely resisted at the entrance of the gorge, but the Afridis were routed and made no further resistance, the British loss being 14 killed and 114 wounded. On the return the British army was in three divisions. Pollock marched through without any casualty; but the second division, and the third, under Nott, were attacked three times, and suffered losses.

There is another pass over the Khaibar Range, to the north, and nearer the Kabul River, called the Tartara route. It leaves the Jalalabad Plain at Daka, and goes over very difficult and rugged mountains to Peshawur, a distance of 32 miles, emerging into that valley 9 miles north of Jamrûd. Following the course of the Kabul for 4 miles, the road then ascends the mountains to a plain, 6 miles wide, where the Abkhana route branches off. Four miles further on, at Luadgai, a path leads off into the Khaibar defile, while the Tartara road goes over a succession of steep hills to the Peshawur Valley, winding round the Tartara Peak.* The Abkhana route leads down to a ferry over the Kabul, 12 miles above the point where that river enters the Peshawur Valley. The passage over the river is made on rafts of inflated bullocks' hides, where it is 120 yards wide, and very rapid. The precipices rise from the river banks to a height of 2000 feet, and the road goes up the Haidar Khan Mountain, whence the distance is 10 miles to the Michni fort, near Peshawur, over spurs of the Mohmand Mountains, on which the olive-trees grow in abundance. North of the Abkhana is the Karapa Pass, which leads from the Michni fort to a district on the Kabul River called Gushtia, about 25 miles below Jalalabad. Masson travelled by the Tartara Pass,† and the Abkhana route was used by Sir A. Burnes on his way to Kabul in April, 1832,‡ and also by Masson.§

We now turn from the northern to the eastern offshoots of the Safid-Koh. Colonel Walker describes them as being remarkable for their parallelism with each other and with the parent range. The main range stretches away to Attock on the Indus, dividing the Peshawur Valley, of which it forms the southern boundary, from the valleys of the Kohat district. Higher up it deflects to the southward, to separate the Tira Valley from Kurman Durrah and the Zaimukht country. Then, passing eastward from the Dullunai-Sir Peak, to the south of the Tira Valley, it separates the affluents of the Khaibar River from those of the Kohat streams. A series of spurs from the Khaibar Range separate, in succession, the Tira, Bara, and Khaibar valleys. The Bara River rises on the eastern slopes of the Safid-Koh, runs east for 40 miles, joins the Tira, and the united stream flows north-east to the Kabul, passing within 2 miles of Peshawur. The water of this river is excellent, and the renowned Bara rice is said to derive its fine quality from the water which irrigates it.|| The valley is in places very narrow, and is thickly studded with hamlets and little towers. Another smaller valley called Bazar, containing the village of Chura, is also fertile and well peopled, and there are paths from it to Jamrûd and

* After the battle of Gujrat and occupation of Peshawur, Sir Henry Green, Sir William Merewether, and Colonel J. T. Walker reached the summit of the Tartara Peak.

† Masson, iii. p. 222.

‡ 'Travels into Bokhara. An Account of a Journey from India to Cabool, Tartary, and Persia,' &c. 3 vols. 8vo., 1834.

§ Masson, iii. p. 240.

|| Ibid., p. 233.

Ali Masjid. The Tira and Bara valleys are separated by a range called Aranga to the west, Shetafi in the middle, and Mulagarh to the east. It is about 7000 feet high. The Tira Valley is about 5500 feet above the sea, almost circular, with a diameter of 5 miles, and further up there is a succession of open spaces, divided from each other by narrow *tangis* or defiles, along the banks of the river. To the south another offshoot, originating from the Safid-Koh, runs due east to the junction of the Kohat and Hangu rivers, and is called the Samana Range. It divides the Khankai Valley from the Miranzai and Hangu, and, commencing at 9000 feet, its height gradually decreases to 6600 feet.

The singular parallelism of the Safid-Koh offshoots is a remarkable feature. In the low sandstone ranges the valleys are straight and parallel to each other, and are connected at right angles by abrupt gorges. In the limestone ranges the north-western faces are uniform slopes, while the opposite sides are scarped and rugged, and overhang spurs separated by deep gorges, which are very difficult of access. In the high sandstone ranges the western slopes are similarly smooth from top to bottom, and the rocks invariably wear away in layers parallel to the original stratification, so that the features of the range are little altered by degradation, and are never rounded off. The watercourses are limited to two directions, which are either perpendicular or parallel to the trend of the range, and it is thus their special characteristic to be incessantly turning corners at right angles. High table-lands are sometimes formed in the trough between two ranges of sandstone and limestone when in close juxtaposition, but otherwise the crests are but a few feet wide, often narrowing to mere knife-edges, with a perpendicular drop on one side and a slope of 60° on the other.*

The inhabitants of the Safid-Koh and its offshoots have been famous for many centuries as audacious robbers. In the extreme north the Mohmands dominate the left bank of the Kabul, and levy tolls at Daka from travellers using the Tartara, Abkhana, and Karapa passes. Their six clans number about 16,000 fighting men. The Afridis occupy the lower and easternmost slopes of the Safid-Koh, including the Khaibar Pass, the valley of Bara, part of those of Bazar (Chura) and Tira, and the range between Peshawur and Kohat. Their limits are from the easternmost spur of the Tartara Ridge to the Tartara Peak, along the crest of the north side of the Khaibar defile to the connecting ridge over which runs the Landikhana Pass, then across the Safid-Koh to the Bara Valley, down to the Kohat Pass, and round the foot of the hills to Jamrud. They make their way up wild glens from the Khaibar Pass to the Bara Valley. Of their 23,000 fighting men, some 500 serve in the Punjab frontier force. They are fine, tall, athletic highlanders, lean but muscular, with long gaunt faces, high noses and cheek-bones, and fairish complexions. They are brave and hardy, but avaricious and murderous

* Colonel Walker.

robbers, and very treacherous. On the Kohat Range, however, they have become traders, selling firewood and carrying salt to Swat and even to Chitral. In winter they live in caves in the cliffs, and in summer in mat tents. The Tira Valley is occupied by the Orakzais, another Pathan tribe, separated from the Afridis by the water-parting of the Tira and Bara. The tribe is divided into four main sections, the whole numbering 29,000 fighting men. Since 1855 they have been very troublesome neighbours to the more settled Kohat districts.

The Kurram Pass.—South of the Safid-Koh, where the Sulimani ranges begin, there is a drainage system extending over a large area, the streams of which converge to the Kurram, a river flowing in a south-east direction across the Bannu district to the Indus. The Kurram rises at the junction of the western Sulimani Range with the Safid-Koh; being formed by the Keriah, the Hariab (Huryab of Elphinstone), and streams from the Mangal country, which unite below a place called Ali-khel (7500 feet above the sea). Thence the combined waters enter the valley, and flow eastwards past the Kurram fort to the village of Thal in Miranzai, which is 42 miles from Bannu. The river then turns south-east, receiving the Shamil and Tochi rivers from Khost and Dawar. The river-basin within the hills, between the eastern and western Sulimani ranges, is of considerable extent, including the main valleys of Kurram, Khost, and Dawar, besides some subsidiary valleys, such as Fummul, at the back of Khost, which is watered by the Tochi, in its upper course. On the north it is bounded by the snowy heights of the Safid-Koh, and on the west by the western Sulimani Range, which forms the water-parting between the Indus and the Afghan drainages.

The Kurram district is about 60 miles long by from 3 to 10 wide. The valley is very beautiful, with the Safid-Koh looking down in great majesty on the smiling green fields and pleasant orchards. The climate is agreeable, and the clear and rapid river renders the supply of water abundant, and irrigates the rice-fields on either side. The water rushes in a winding and rocky bed down the centre of a deep fillet of rich cultivation sprinkled with villages, each with its clump of magnificent plane-trees, while the distance is everywhere closed by the ever-varying aspect of the noble mountains which tower over the valley in its whole length. The road enters the valley at Thal, 66 miles from Kohat and 50 from the Kurram fort, and proceeds along the banks of the river. There is an alternative route, leaving the main road about 36 miles further on, and passing over the Darwaza Pass, where there is good grazing ground, to Kurram. The fort of Kurram (6000 feet) is a square enclosure with round towers at the angles and in the centre of each face, and an inner square forming a citadel. At a distance of 25 miles from the Kurram fort, up the valley, is the village

of Paiwar, at the foot of a narrow gorge. Here it is necessary to cross a steep spur which forms one root of the Sikaram Peak, the loftiest of the Safid-Koh Range. Over this spur there are two roads, one by the Paiwar Pass, and the other, higher up, called the Ispingwai Pass. By the Paiwar the road leads over several deep ravines with oak jungle, and then up a zigzag ascent, with the hills on either hand covered with pine forests. The descent on the other side is gradual. The fine timber grown on these mountains is floated down the river to Bannu. The actual ascent was estimated at 1000 feet, and the crest of the Paiwar Pass is 8000 feet above the sea. From the Paiwar there is a descent to Ali-khel, and then an ascent to a camping-ground called Hazaradarakht ("Thousand trees"), which is covered with snow in winter; but in summer the short sweet grass, with stunted growth of *artemisia*, orchises, and lilies, affords good pasture. From this place a pass leads over the Safid-Koh into the Kabul basin, which is frequented by traders of the Jaji tribe. Masson visited a place called Murkhi Khel in the plain of Jalalabad, which is at the foot of another road leading over the Safid-Koh into the Kurram Valley. Here he saw many Jajis who had come over the pass.* From Hazaradarakht the Shutar-Gardan Pass ("Camel's neck") is reached, which crosses the Safid-Koh. The *Shutar-Gardan* is 11,200 feet above the sea. The descent into the Logar Valley is long and steep, with sharp zigzags. The pass is overhung with huge masses of naked limestone rock cropping out in every direction,† and the mountains have a rugged aspect. The country between the Paiwar and Shutar-Gardan passes, comprising the Upper Kurram Valley, is called Huryab by Elphinstone, and is the Iryâb of Timur's historians.

South of the Kurram Valley is that of Khost, which is watered by the Shamil River (or Keyti), a tributary of the Kurram. This valley is 40 miles in length, is fertile and productive, while the surrounding mountains afford plenty of timber and pasturage. Khost contains many small villages, and a population of about 12,000. Between Khost and the western Sulimanis is the valley of Furmul, with a river forming the head-waters of the Tochi. It is inhabited by Tajiks speaking Persian, who have one village called Urghun, and are chiefly occupied in smelting iron.‡ Parts of the valley are also occupied by the Karotis. East of the Furmul and south of the Khost valley are the upper and lower Dawar valleys, separated by the Tograi Tangi Pass, and surrounded by mountains. Together they are 40 miles long, both being fertile, and well watered by the River Tochi, which has the name of Gambila lower down at Bannu, and is a tributary of the Kurram. The villages are walled, and every field is defended by a tower. The surrounding mountains are snow-covered for three months, but there are good pastures on their slopes, and the people have large herds and flocks, and

* Masson; iii. p. 302.

† Lumsden.

‡ Broadfoot.

raise crops of grain, which is exported. The population of Dawar is about 25,000, and there is a steady trade, by roads practicable for camels, to Khost and Waziristan. The road to Dawar from the plains leads up the Tochi River, crossing and recrossing it seventeen times. There is a way over the Shinki-Kotal Pass, and another, longer and steeper, by the Baran. A third route to Dawar is by the Khusora Pass, which leads into the Tochi Valley, its mouth being 6 miles to the south-west.

Thus the Kurram system includes the mountain valleys of Kurram, Hariab, Kerman, Furlul, Khost, and Dawar. The inhabitants belong to various tribes. In the upper part of the Kurram Valley are the Jajis and the Mangals. The former extend from the Shutar-Gardan Pass to the Paiwar, and are believed to number about eight hundred families in eight different *khels* or clans, but their numbers have been much reduced by constant intestine feuds. Their strongly-built houses are often blockaded by enemies, as well as by the snow, and are pierced with rows of apertures for shooting through, and for use as chimneys or ventilators. The Jajis are of the Shiah sect—a hardy, but very dirty race. They breed mules, which are much in demand at Kabul. The Mangals are not only in the upper part of the Kurram Valley, but extend over the western Sulimani Mountains into Zurmat, and levy tolls on the Paiwar Pass. Lower down the Kurram Valley dwell the Turis, who have a blood feud with the Jajis, though both belong to the Shiah sect. Neither are considered to be Afghans, but both are supposed to be of Mongol descent. The five *khels* or clans of the Turis number about 5000 men. It appears that the Bangash tribe, many of whom also inhabit the Kurram Valley, formerly possessed the whole, but that they were conquered by the Turis, and are now subject to them. The Bangash are Pathans, and also inhabit the Miranzai and Kohat valleys, mustering about 15,000 fighting men. On the north side of the Lower Kurram, between that valley and the Miranzai, dwell the Zaimukht Afghans, counting some 4500 fighting men.

The Kurram Pass, being the direct road from Bannu to Ghazni, has been for centuries looked upon as one of the most important routes across the Sulimani Mountains. In the days when Muhammad Ghorî ruled in Hindustan (1193–1205 A.D.), Kurram was the seat of government of his lieutenant Ilduz, who coined money there,* and it was from Kurram that Ilduz advanced over the Shutar-Gardan and conquered Ghazni. It was, as we have already pointed out, down the Kurram Pass that Chingiz Khan hunted the Prince of Khuwârizm, in September, 1221; but we have a clearer account of Timur's use of the same road, from his historian, Sherîfu'-d-Dîn Ali of Yezd. In 1398, Timur's grandson, Pîr Muhammad, had advanced into the valley of the Indus from Kandahar, and laid siege to Multan. The resistance was protracted, and this induced Timur himself to invade India. He set out

* Thomas's 'Pathan Kings,' p. 27.

from Kabul on the 31st of August, 1398, and reached a place called Iryâb, which General Cunningham tells us was in the Khost Valley, but it is really the Upper Kurram Valley, called Huryab by Elphinstone, and the Hariab of the present day. He then took a route by "Shenûzaun" and "Keptcheghai" to the fortress of Nagar or Nugher, where he arrived by forced marches on September 3rd, after punishing a marauding tribe with great severity. The dates in Price* cannot be correct; but, Iryâb being in the Upper Kurram Valley, Nagar was lower down in the direction of Bannu. Accordingly Nagar has been identified, by Masson, with Kafr-Kot, a remarkable ruin near Bannu.† Timur went thence to Bannu, and crossed the Indus on September 23rd. When he returned he again used the Kurram Pass, leaving Bannu on March 11th, 1399, and arriving at Nagar on the following day.

Timur's descendant, the Emperor Baber, mentions four roads which lead from Kabul to India. The first, by way of Lamghanat, I have already mentioned. The second, he says, leads by Bangash; and Bangash, as we have seen, is the name of a tribe which then possessed the Kurram Valley. The third is by Naghr, the place mentioned in Timur's history, probably the Kafr-Kot; and the fourth by Fummul, in the valley of the Tochi, to the south of the Kurram. So that two out of Baber's four routes are by the Kurram Valley. There is a pass, perhaps a better one than that over the Shutar-Gardan, by the Fummul Valley, which is mentioned by Baber as leading to Kandahar. It goes from the Kurram fort and across the western Sulimanis into Zurmat, but it is unknown. In modern times the Kurram Valley was entered by a retributive expedition under General Chamberlain in 1856, when Captains Garnett and Lumsden surveyed it as far as the Paiwar Pass; and this survey was extended to Ghazni when the Lumsden Mission to Kandahar went up the Kurram Pass in 1857-58. Sirdar Muhammad Azim Khan, half-brother of the present Amir of Kabul, had a grant of the Kurram Valley, and on one occasion he carried artillery (6-pounders) over the Shutar-Gardan. They were placed on short double-humped Bokhara camels.

Waziristan.—From the southern extreme of the Kurram basin to the peak of Takht-i-Suliman is the country of Waziristan, and here the eastern Sulimani Range is more distinctly developed as a lofty chain of mountains, with several parallel ridges. In this section we have the able guidance of Colonel Walker, who explored the region in 1860; while the Great Trigonometrical Survey has accurately measured the principal peaks. Here the Sulimani Range, as seen from the Indus, appears to rise from the plains like a wall, but it is pierced at numerous points by streams, which take their rise far west, either on the slopes of the western Sulimani Mountains, or on intermediate spurs, lower than the outer range through

* Price, iv. p. 232.

† Masson, i. p. 102.

which they break before entering the plain. But the streams of the eastern Sulimani Range scarcely merit the designation of rivers; for they are but dry watercourses during the greater portion of the year. There is little moisture to feed them in their parent mountains, which are desiccated by the heat radiated from the extensive plains to the east and west. Vegetation is scarce, the soil is dry and arid, and pine-trees are not met with at a lower elevation than 9000 feet. Towering above all the other peaks of the range is the Takht-i-Suliman, opposite the town of Derah Ismail Khan on the Indus. Its summit is described as a narrow plateau about 5 miles long, stretching from north to south, with culminating points at either extremity, the northern peak being 11,300 and the southern 11,110 feet above the level of the sea. In the country of the Waziris to the north there are two other lofty peaks, the Pirghul, 11,580, and the Shah Haidar, 9000 feet above the sea.

Between the eastern Sulimani and the plains of the Derajat, bordering the Indus, there are belts of low hills composed of sandstone and conglomerate, with long narrow valleys like the Dhúns between the Siwaliks and Himálayas. These hills are inhabited by a small Pathan tribe called Batani, and Colonel Walker therefore calls the valleys between them the Batani Dhúns. But they are very unlike the Dhúns of the Himálaya. The Batani Dhúns are bare, arid, and uncultivated, for the streams from the higher hills, in passing through them, rush across abruptly in deep courses. There are no less than thirty-two passes from the plains of the Derajat into the Batani Hills, namely, the

1. Shamla, or Kurd Koh.	11. Larzan.	22. Paraghul Gad.
2. Saroba Kalan.	12. Zaneja, or Bain.	23. Kaidan.
3. Uch Saroba.	13. Gulhara.	24. Suja.
4. Sond.	14. Baz Gorah.	25. Mokiblah.
5. Kuha.	15. Sorah.	26. Tanazi.
6. Armula.	16. Khushk Kankara.	27. Khah Putr.
7. Nugram.	17. Tand Kankara.	28. Malkar.
8. Khandi.	18. Khushk Chinai.	29. Ghoraisi.
9. Karoba.	19. Tand Chinai.	30. Spin-ka.
10. Manglia.	20. Garial Gad.	31. Gasha.
	21. Pungi.	32. Tank (Zal).

The range of hills immediately west of the Batani Dhúns is composed of sandstone, in rear of which are limestone hills; and the river valleys vary in width from half a mile to a few feet, being narrowest when breaking through the axis of a ridge, and widest just before doing so, where there is usually a small oasis of cultivation. The best routes into Waziristan are through the Tank (Zam) Pass, which is practicable for artillery, and by the Khusora Pass further north; but there are many others.

The Waziris are a very large tribe divided into five great branches, namely, the Utmanzais, Ahmadzais, Mahsuds, Gurbaz, and Lali; the Kabul Khel, whose name occurs so often in border troubles, being a clan

of the Utmanzais. The whole tribe numbers 44,000 fighting men, of whom the Mahsud Waziris, who inhabit the portion of the Sulimani Mountains called Waziristan, claim 14,500. Our knowledge of their country is derived from the expedition of General Chamberlain in April and May, 1860, which was sent to punish a long series of raids and outrages. He entered by the Zam, and went out by the Khusora Pass. There are only two towns in the Waziri Mountains, Kaniguram and Makin, where iron is worked, and every village has its smelting furnace. The ore is broken to pieces and burnt in charcoal furnaces, with bellows of goat-skin. The iron runs out in rough pigs, and is worked into horse-shoes, gun-barrels, and swords. Kaniguram consists of about twelve hundred houses, built on the sides of a narrow ridge, the outer walls of the houses resting on fir poles planted vertically into the slope of the hill, with horizontal timbers thrown across. The chief roads of the town pass under these covered ways, the timbers above serving as floors for the houses. The most remarkable feature in the country of the Mahsud Waziris is the Ruzmuk Plain, which is 7 miles long by about 2 broad and 6800 feet above the sea. It has a very gentle slope southwards, in which direction its waters drain into the Zam, while on the north it terminates perpendicularly in a scarp of about 400 feet over the valley of Khissara. The expedition into the Mahsud Waziri country was not only accompanied by Colonel Walker, but also by Dr. Stewart, an eminent botanist, who has described the *flora* of this section of the Sulimanis. On the lower slopes of the Batani Hills there were tamarisk-trees, and higher up such shrubs as *Acacia modesta*, *Capparis aphylla*, and *Zizyphus jujuba*. They then came to a region of peach-trees, ferns, *Buxus sempervirens*, *Daphne oleoides*, an oak, and a bramble (*Rubus fruticosus*). At Kaniguram there were poplars and willows near the beds of streams, apricots and peaches, jasmine, and berberis. Near the brooks were *plantago*, *oxalis*, *trifolium*, *malva*, wild thyme, and several *labiatae*; while tall pine forests were seen on the slopes of the Pir-Ghul. Most of the shrubs were Himálayan, and the herbaceous plants were western and European.

The Gomul Pass.—On the south of the country of the Mahsud Waziris, and just north of the Takht-i-Suliman Peak, is the Gomul River, which, with its affluents, probably drains an area of 13,000 square miles of the mountain region between the western and eastern Sulimanis. During the rains it stretches over the plains below Dera Ismail Khan, between the mountains and the Indus, to a width of 10 miles; but in ordinary weather it dries up, or is absorbed for irrigation. From the entrance of the Gomul (or Ghwalari) Pass there is a continuous ascent to the Kotal-i-Sarwandi, which is about 7500 feet above the sea, a distance of 145 miles by the road. The Ghwalari Pass is through a defile, with perpendicular walls 50 to 100 feet high, and about 200 yards wide. Beyond is the plain

where the Gomul River is joined by the Zhob, which, rising in the western Sulimanis, near the Toba Peak, to the south, has a course of 90 miles. There is a pass up the river called the Zawa, but it is entirely unknown. The Gomul route thence follows the course of the stream, crossing and recrossing many times in every mile, and there is one other easy pass before the final ascent to the crest of the western Sulimanis.

The Gomul Pass is, in several respects, the most interesting in the whole range, for it has been the great trade route between India and Central Asia during several centuries. The Povindahs, or trading tribe of Afghans, say that they are descended from a goatherd of Ghor, in the Hazarah Mountains, in the days of Mahmud of Ghazni, and they have been merchants ever since, annually passing up and down the Gomul Pass.

One *khel*, or clan, of the Povindahs, called Niazis, has settled down to agricultural pursuits in Bannu, and the Karotis inhabit the upper valley of the Gomul and the Urghun district, on the eastern slopes of the western Sulimanis, some being shepherds and fond of deer-stalking, and others carrying on the trade with Herat. The Lohani and Mian Khel Povindahs have continued the trade in the face of extraordinary difficulties for centuries. Just as they may be found now encamped on the Derajat Plain, with their Indian merchandise ready to ascend the pass, so the Emperor Baber found them during his famous raid in January, 1505. He robbed their caravan and killed their chief, and then went up by a pass south of the Takht-i-Suliman which joins the Gomul, and so by the Abistada Lake to Ghazni. But an attack upon the Povindahs in the plains was rare; their great danger is in the pass, from the Mahsud Waziris, who watch every opportunity to attack and rob them.

In the summer the Povindahs are encamped in tents on the plains near Kalat-i-Ghilzi and Ghazni, where they pay Rs. 600 a year to the Amir of Kabul for grazing rights. The women and children, with a sufficient guard, remain at the encampments, while the men are away trading at Samarkand and Bokhara, at Herat and Kabul. In the autumn they assemble to form the Indian *kafila* or caravan. The tents are stowed away in a friendly fort, and the whole tribe, men, women, and children, go down the Gomul Pass to the plain of the Indus, fighting the Waziri robbers as they go, and forming a bivouac each night round their baggage. Lieutenant Broadfoot, who went with the army of the Indus as far as Ghazni in 1839, accompanied a Povindah *kafila* down the Gomul Pass in the autumn of that year. The camels were not in strings, but driven separately, with horsemen in front and rear; while the young men, well armed, scoured the hills on either side in search of hares and deer, and as flanking parties. On arriving at a camping-ground the women help to unload, the girls draw water, the men graze the camels, and sentries are posted. The Povindahs bring down to India grapes, pears, apricots, almonds and raisins, figs and walnuts,

roses, rhubarb and jujube fruit, saffron, madder, silk, cloths, druggets, saddlery, horses, ponies, dogs, and cats. On arriving in the Derajat, near the banks of the Indus, they pitch their second set of tents, and the men go off with their merchandise to Multan, Lahore, Benares, and other parts of India.

In April the Povindahs assemble again for the return journey, taking back European and Indian goods, spices, sugar, tea, guns and pistols, and hardware. A single Englishman, Lieutenant Broadfoot, has accompanied a Povindah caravan down the Gomul Pass. One other Englishman, Mr. G. J. Vigne, joined their caravan in the Derajat, and went up with them some years previously. He found the Lohani camp on the hot plain near the Gomul, where it flows across the Derajat towards the Indus. The merchants had not yet returned, and the families were waiting for them. The boys were amusing themselves with pellet bows, bringing down the little birds with sure aim. Young girls were swinging, children splashed and dabbled in the stream, donkeys chased each other about, to the great discomfiture of tent-ropes. It was a scene of careless ease. Occasionally a string of camels or a single horseman came into camp. At last the fathers of families arrived with their merchandise, and the *kafilas* prepared to start. They set out from the encamping ground of Draband, 3 miles from the right bank of the Indus. The Povindahs went up the pass in three divisions, the first on about the 10th of April, the second on the 20th, and the third early in May. The children's hair was braided with gold coins, and the women wore massive earrings. Young brides were carried on rich cushions of silk on the backs of camels hung with tassels and ornamented with fringes and cowry shells. Older ladies were balanced against each other in baskets. The cavaliers, on handsome horses with gay trappings, pranced by the sides of their ladies. And so the great caravan moved up the pass, where there was serious work to do. On the third halt two men were murdered while asleep by Waziri robbers. Two days afterwards there was a fight in a narrow gorge, when five men were killed and two wounded. Shortly afterwards three of the rear guard fell victims; and so they fought their way up the pass. At several points on the road there are graveyards of the soldier merchants. Just before the last ascent, one division took a route to the south which led to Kandahar in ten marches. The rest went over the crest, and Mr. Vigne found himself in a country where the wild thyme and *artemisia* scented the cool air. Sand grouse and antelope afforded excellent sport, and the plains were dotted with mud forts and walled gardens of mulberries and apricots. This route leads by the Abistada Lake to Ghazni.

Besides the Gomul, the Lohanis occasionally use some passes to the south of the Takht-i-Suliman, such as the Shekh Haidar or Zarkani, which leads to Kandahar, by the Zawa (Zao) route up the Zhob Valley.

By this way there is a gorge to pass, which is a mere cleft 16 feet across, with perpendicular cliffs 500 feet high on either side.

The Povindah trade is worth upwards of fifty lakhs of rupees, and its survival in the face of such obstacles is a proof of its healthy and permanent character, and of the skill and gallantry of the merchants.

The Sanghar and Sakhi-Sawar Passes.—The Darwazi Pass is the next to the Shekh Haidar, and leads into the more important Draband Pass to the south, which has a plentiful supply of water. It leads round the north flank of the Takht-i-Suliman Peak, and, joining the Dahina Pass, is one route to Kandahar. Next to it are the Guioba, Walia, Chaodwan, Torzoi, and Chabwi passes, merely leading to the country of the Shiranis, a Pathan tribe of inveterate marauders, numbering about 5000 fighting men. The Dahina Pass is more important, as it is a route from Chaodwan, in the Derah Ismail Khan, through the Shirani country into the Zhob Valley, and thence by the Zawa route to Kandahar. South of the Shiranis come the Ushtaranis, another Afghan tribe, composed of peaceable and harmless people, but not numerous. They are separated from the Kihtrans, another small tribe, by the Kaura Pass. The Kihtrans have charge of the Wahwa Pass, and of the Barku^é, which joins it, as well as of the Liriah. The Wahwa was once frequented by merchants as a route to Kandahar. The Kihtrans are the last Afghans along the outer Sulimani Mountains, and their neighbours to the south are the Baluchis of the Kasrani tribe.

The Kasranis are met with both in the plains and among the hills, round the Bhati and Khanwah passes. In the hills there are about 450, and in the plains 1500 fighting men.

The Sanghar Pass, 30 miles south of that of Wahwa, debouches into British territory on the plains, in front of the fort of Mangrota. It is the principal entrance into the country of the Bozdars, a Baluch tribe in the outer hills, whose territory extends for about 40 by 30 miles, and is mountainous throughout. They number about 3800 fighting men. The Bozdar country is a series of bare and sterile ridges, divided by ravines, with occasional small patches of cultivation. Thus they are necessarily robbers, and, having given much trouble, an expedition was organised against them in 1857, under General Chamberlain. The troops entered by the Sanghar defile, which is bounded on either side by scarped hills of considerable height, and inflicted punishment upon the mountaineers, but the pass was not penetrated to any great distance. The Sanghar Pass is the most important route across the mountains between the Gomul and the Bolan. It is broad, practicable for light artillery, and is the best and most direct road from Multan to Kandahar. The Sanghar River rises in the western Sulimani Mountains, as do its principal feeders, the rivers Drug and Lundi. There is plenty of water in all parts of the pass, and forage is abundant; while the defile over the

western Salimani Range, near the Toba Peak, is comparatively easy. Major Raverty has shown that the Sanghar Pass was used in 1653 by Prince Dara, son of the Emperor Shah Jehan, when he marched with a large army to besiege Kandahar, which city had fallen into the hands of the Persians. His army consisted of 104,000 men, and ten guns of heavy calibre, besides thirty smaller pieces. The siege guns were sent by the Bolan, while the rest of the army marched up the Sanghar Pass. Kandahar was invested from March to September, when Prince Dara was obliged to raise a siege which had lasted five months. He returned down the Sanghar Pass with an escort of a thousand cavalry, in October, 1653.

South of the Sanghar Pass there are eighteen passes into the Bozdar and Laghari country, some of which lead into the Sanghar, while others merely form routes across the outer chain. They are the

Mahuey.	Rekharn.	Ghaman.	Widor.
Shori.	Ghazi.	Sufaidu.	Dalanah.
Mati.	Satai.	Karu.	Ohhoti-i-Bala.
Kaleri.	Behlab.	Sur.	Chhoti-i-Pain.
Suri.	Kahbi.	Raey.	

This section of the hills is occupied by the Khosah and Laghari Baluch tribes, the latter numbering under 4000 fighting men.

The Sakhi-Sawar Pass is occupied by the Lagharis. It is named after a village and shrine of a saint (born in 1291 A.D.), which stands on a spur jutting out into the plain, about 4 miles east of the entrance to the defile. There is a march of 18 miles to Siri, and the road then ascends in zigzags for nearly 5 miles, when a plateau is reached, which extends for another 5 miles. A descent leads thence into the Sanghar Pass; so that the Sakhi-Sawar is an important alternative route from the plains to Kandahar.

South of the Sakhi-Sawar Pass begins the country of the Gurchani Baluch tribe; where are the Kurah, Khasurah, Zangi, Suwagri, Ghati, Kaha, Khalgari, Chachar, Pitoh, Shuri, and Fajru passes. Of these the Chachar is the pass of most importance in the Southern Derajat. It was once a thoroughfare for caravans coming from the Zhob (Zawa) and Sanghar routes. But the depredations of the lawless Baluchis diverted them into less dangerous, though more circuitous routes. It is now only used by the marauders, and is practicable for horses and mountain guns.

Further south are passes called Baghari, Jahagzi, Thok, Chak, Shori, Mughal, Isfringhi, and Tahani. They all lead towards a very remarkable plateau, or, rather, series of plains divided by low hills, known as the Phylawar-Sham Plain, about 1500 feet above the sea. The word *Sham* in the Baluch language means a water-parting between two streams. The Sham Plain is high ground, within the Sulimani mountain system, dividing the drainage of the Chachar and Kaha rivers, with the Mari Hills to the east. It is 30 miles long by 25, with an area of about 900

square miles. It is abundantly watered by numerous perennial hill streams, and is everywhere clothed with rich grass, while shrubs and trees grow along the courses of the ravines; but the lawless character of the Mari and Bughti tribes, especially the former, who infest the approaches, prevents its cultivation or settlement. The gokhars, or wild asses, wild hogs, deer, and horses are the occupants of the Sham Plain.

The Mari and Bughti Baluch tribes occupy the lower hills in this section of the Sulimani Range. The Mari country is mountainous and barren, with a few fertile spots. Their chief town is Kahan, in a valley about 12 miles long, and they can muster 4000 fighting men. The Bughtis, more to the south, have a fighting force of 2200. Their chief town is called Dera. The Maris and Bughtis have given incessant trouble on the frontier by their depredations. In 1839 Major Billamore led a force into the Bughti Hills and inflicted great loss upon them, and in 1845 Sir Charles Napier conducted a campaign in the Mari and Bughti country. In 1846 the Bughtis carried off 15,000 head of cattle from the plains; but since then they have been kept in check by the Sind Horse, and one of Sir William Merewether's most brilliant feats was the defeat of a large force of Bughti marauders with a small body of Sind cavalry in 1846.

To the south of the Sham Plain are the Zangi, Sat, Naffusk, Sartaf, Jihari, and Suri passes, leading into the Mari and Bughti hills; the last-named pass encircling the Sham Plain to the south. It was one of the principal routes of the Maris in their raids into the plains. Here is the boundary between the Derajat and Upper Sind; and the mountains, followed by the course of the Indus, make a very decided bend to the westward. The receding hills give space for the large Baluch district of Kachhi, with an area of 9000 square miles, a level region suffering from excessive heat and scarcity of water. There is an isolated ridge on the south-east side of the Sham, between that plateau and the plains, called Mount Gandhari, which forms the angle whence the outer range of Sulimani Mountains turns westward towards Dadar and the mouth of the Bolan Pass. The inner or western Sulimani Range continues to form the water-parting, and terminates at the Tukatu Peak, overlooking Kwatah, which is 12,000 feet above the sea. The Tukatu Range, north of the Bolan Pass, runs east and west, and appears to hold an analogous position at the southern extreme of the western and eastern Sulimani chains to that which, at their northern ends, is occupied by the Safid-Koh.

The western Sulimani chain of mountains, which forms the water-parting, is very little known, and has only been visited at the crests of the Kurram and Gomul passes. It probably has an elevation never less than 7000 feet, and towards the south there are some lofty peaks, namely Toba, Kand, and Tukatu. Near the Toba Peak an important offshoot

branches off to the eastward, which has several names. At first it is known as the Toba Range, and here was the sanatorium where Ahmed Shah Durani, the founder of the Afghan kingdom, died in 1773. The descriptions of the Toba district show it to be rather a lofty and broken plateau than a defined mountain range. Afterwards the spur from the western Sulimani Mountains is called Khojah Amran. It separates the basins of the rivers Argandab and Lora, extends for about 170 miles, and eventually subsides into the Baluchistan deserts. There are several passes over it, one of which called the Kohjak Pass, is on the main road from Kwatah (Quetta) to Kandahar, and was used by the army of the Indus in 1839.

The above description of the Sulimani system has been necessarily fragmentary, because there are wide gaps in our knowledge—extensive unexplored areas. I think, however, that the great features come out with sufficient distinctness. There is the main western Sulimani Range, forming a distinct water-parting between Afghanistan and India; and there are the eastern Sulimani Mountains with probably loftier peaks, but much broken, and far less clearly defined in their whole length. The intermediate space is occupied by a central chain which has been traced for a considerable distance. It branches from the Safid-Koh at the foot of the Sikaram Peak, where it is crossed by the Paiwar and Ispingwai passes. It is cut through by the Kurram River, and then continues in a southerly direction, forming the northern boundary of the Khost Valley, and of the Mahsud Waziri country. It may also be traced across the Gomul road, but our present information does not enable us to follow its direction further south. The limits of the system seem to be sharply defined by the transverse ranges of the Safid-Koh on the north and of the Tukatu on the south extremity. The numerous passes which have been enumerated vary very much in importance. Only a few form main routes from India to Afghanistan. There are but three (possibly four, including the unknown Zawa up the Zhob Valley) from the Safid-Koh to the Tukatu; namely, the Kurram, the Gomul, and Sanghar passes. A great number lead into these three from the plains, and thus form alternative routes; and several branch off from them on approaching the crest of the western Sulimanis. Many scores of passes also enter the hills from the plains of the Indus, which merely lead to the valleys occupied by hill tribes.

The Bolan Pass.—From the Tukatu Peak the Hala Mountains commence, which divide Baluchistan from Sind, and extend to the Arabian Sea. They are traversed, at their northern extremity, by the Bolan Pass, the entrance to which, in the low country of Kachhi, is in latitude $29^{\circ} 30' N.$, about 500 miles south of the Khaibar Pass. The opening is 5 miles north-west of the town of Dadar (742 feet above the sea), and the route leads in a north-westerly direction over the mountain chain, by a

succession of narrow valleys and gorges. The Bolan River, rising at Sir-i-Bolan, near the head of the pass, flows through it and supplies water along the whole route as far as its source, with the exception of one stage, where it has an underground course. The first stage of 7 miles to Khundilani is through a valley enclosed by low hills, but on the next stage of 14 miles to Kirta the pass rapidly narrows, and conglomerate cliffs, 800 feet high, close in on either side, leaving a narrow passage, through which the river flows. Kirta is a broad, level valley, 1200 feet above the sea, and surrounded by hills of nummulitic limestone. The next march of 9 miles leads to the valley of Bibi-Nani, whence a branch route goes over the hills to the left, by Rodbar, to Kalat. From Bibi-Nani to Ab-i-Gum ("lost water") is a distance of 24 miles, and it is on this stage that the river disappears. It percolates through the pebbles at Ab-i-Gum, flows underground for 14 miles, and comes out again at Bibi-Nani. Ab-i-Gum is 2600 feet above the sea. Sir-i-Bolan, the source of the river, is 6 miles beyond Ab-i-Gum, and 4400 feet above the sea. In the conglomerate hills, near this place, there are thin seams of coal.* For 10 miles beyond Sir-i-Bolan, to the top of the pass at Dasht-i-Bidaulat, there is no water. In the last 8 miles the hills on either side close in until only three or four men can ride abreast, while the limestone cliffs tower up to a great height. The gorge opens out into a narrow valley, at the end of which the path crosses the crest of a hill and enters the broad plain of Dasht-i-Bidaulat. The crest of the Bolan Pass is 5800 feet above the sea, and the total length from Dadur is 60 miles. The road leads thence to Kwatah (Quetta), 5537 feet above the sea.†

The Bolan Pass was used by Prince Dara, in 1652, for the transport of his heavy artillery when he besieged Kandahar; and Ahmed Shah Durani came down it more than once when he invaded India. The first Englishman that traversed the Bolan Pass was Mr. Masson, in 1820, and he was followed by Arthur Conolly in December, 1830, who has given a very graphic description of it. In 1839 the army of the Indus marched to Kandahar by the Bolan, the Bengal column traversing it with heavy artillery (8-inch mortars, 24-pounder howitzers, and 18-pounder guns) in six days; and the Bombay column, which followed, in about the same time. Dr. Kennedy, who was with the Bombay column, published a full account of the pass. It is infested by Mari and other robbers, who plunder the caravans, and in the season of freshes there is danger from the Bolan torrent, which rises very suddenly. In 1841 a Bengal detachment was lost, with its baggage, overtaken by a sudden flood.

The Mula Pass.—There are ten other passes, in an extent of 60 miles, leading from the plains of Kachhi to the Baluchistan highlands across the Hala Mountains, namely, the Kahun-karastah, Gazak, Makh-karastah,

* See 'R. G. S. J.,' xii. p. 110.

† Dr. Griffith's observations.

Ladau (or Muaj), Takari, Mula, Naghau, Bhore, Shadihar, and Nurmak passes. The principal route south of the Bolan is by the Mula Pass, the entrance to which is 9 miles from the town of Kotri. The road follows the Mula stream, crossing it several times, and after 12 miles enters a very narrow and tortuous defile with perpendicular masses of rock on either side. This leads to a basin in the hills, with some cultivation, and for the next 16 miles the ascent is easy up the bed of the stream. The pass then widens considerably, and leads into the Hatachi Valley, where supplies are abundant. Further on, after 16 miles up a winding stony path through tamarisk jungle, there is another tortuous defile emerging on the great open tract of Nasr, where there is a good deal of scattered cultivation, with pasture on the neighbouring hills. Hence a cross road leads to Khozdar. The main route ascends to Patki, 4250 feet above the sea, and again enters a narrow defile forming a passage 40 feet wide, and 12 miles further on is the source of the Mula River. Then the top of the pass is reached at 5250 feet above the sea. The pass is 102 miles in length, and forms a sharp angle, running south-west to Nasr, and then turning north-west to its summit, leading thence northwards up the Nal Valley to Kalat, the capital of Baluchistan.

From the southern angle of the Mula Pass the Hala Mountains run southwards to Cape Monze, a distance of 200 miles. They are called the Kirthar Hills from the Mula down to the 26th parallel, opposite Sehwan on the Indus, and thence to the sea they are locally known as the Pubh Hills, ending in Cape Monze, the western boundary of British India. The Kirthar division has peaks which attain a height of from 7000 to 8000 feet; and the table-land of Baluchistan, which the Hala Mountains support, is at Kalat 6800 feet above the sea. The hills gradually lose their elevation as they approach the sea, the Pubh Hills being only 2000 feet high; and Cape Monze itself (Ras Mowari), in latitude $24^{\circ} 50' N.$, though a prominent headland, is of moderate height. The highest part of it is 1200 feet above the sea, and Jebel Pubh, to the north, is about 2500 feet. The two heights are separated by the Hubh River, and are excellent landmarks for making Karáchi during the south-west monsoon.

Authorities.—An attempt to describe an important region, and to define its main features, with very incomplete materials, is always unsatisfactory, but it serves a useful purpose. We thus take stock of our geographical materials, and this process often leads to accurate and authoritative communications from others who are more conversant with special portions of the subject. It is desirable also to record the sources of information which already exist. The Emperor Baber has handed down much valuable topographical detail.* To the persevering

* 'Memoirs of Baber, Emperor of Hindostan,' written by himself, translated by Leyden and Erskine, 4to., 1826.

researches of Mountstuart Elphinstone * and Lieutenant Macartney,† we owe our first detailed information respecting the mountains on the north-western frontier of British India. The spurs of the Safid-Koh and the Khaibar Pass were first described, in modern times, by Moorcroft,‡ Masson,§ and Vigne,|| and by our gold medallists, Sir A. Burnes,¶ and Lieutenant Wood,** L.N., as well as by Dr. Lord, Captain Leech,†† and by Sir H. Havelock, Colonel Dennie, Vincent Eyre, Greenwood, and other officers who served in the Afghan war. The first section of the Sulimani system from the Safid-Koh to the Takht-i-Suliman, including the Kurram Pass, has been brought to our knowledge, in the best form, by our distinguished Associate, Colonel J. T. Walker, C.B., the Superintendent of the Great Trigonometrical Survey, and now also Surveyor-General of India, in the admirable paper published in our Journal for 1862.‡‡ He himself explored Waziristan with General Chamberlain's field force, and he tells us how the Kurram Pass was surveyed in 1856 by Captains Lumsden and Garnett, and explored in 1867 by the Lumsden Mission,§§ which included Dr. Bellew,||| and how much additional geographical information respecting this region was collected by our Associate, Colonel Johnstone, C.B., when he was Topographical Surveyor of the Derajat;¶¶ while Dr. Stewart, of the Forest Department, reported upon the *flora* of the Waziri country.*** The Gomul Pass was traversed by Mr. Vigne,††† and afterwards by Captain Broadfoot,‡‡‡ and it is well described by the former in a small volume published in 1840. Further south, as far as the Bolan Pass, no Englishman has ever traversed the mountains from India to Afghanistan; but General Chamberlain and other officers, when punishing inroads of the wild tribes, have entered and penetrated for some distance up many of the passes. Major Raverty, whose scholarly and accurate research

* 'Account of the Kingdom of Cabul,' 4to., 1815. 'Account of Cabul,' 2 vols. 8vo., 1839.

† The map in Elphinstone's work, by Macartney, is a monument of the industry and sagacity of its compiler.

‡ 'Travels in the Himalayan Provinces of Hindostan,' 2 vols. 8vo., 1841.

§ 'Narrative of Journeys in Belochistan, Afghanistan,' &c., 4 vols. 8vo., 1842-43.

|| 'Personal Narrative of a Visit to Cabul,' &c., 8vo., 1840.

¶ 'Cabool in 1836-38,' 8vo., 1842.

** 'Journey to the Source of the Oxus,' 8vo., 1841; 2nd edition, with Introduction by Colonel Yule, 1872.

†† 'Reports by Burnes, Lord, and Wood, Political, Geographical, and Commercial, in Scinde and Affghanistan,' maps, 4to., Calcutta, 1839.

‡‡ 'On the Highland Region adjacent to the Trans-Indus Frontier of India,' 'R. G. S. J.,' xxxii. p. 303.

§§ Official Reports.

||| Ibid. And 'Journal of a Political Mission to Afghanistan in 1857,' 8vo., 1862.

¶¶ Official Reports, condensed in the Annual Reports on the Topographical Surveys of India.

*** 'R. G. S. J.,' 1862, vol. xxxii. p. 316.

††† 'Personal Narrative of a Visit to Cabul,' 8vo., 1840.

‡‡‡ Official Report.

places him in the foremost rank as an authority, has a profound knowledge of this region; and there must be many unpublished reports of frontier officers containing invaluable geographical information. At the Bolan Pass we come again to well-trodden ground. It was described years ago by Masson* and Conolly,† and by Dr. Kennedy, Major Hough,‡ and others who accompanied the army of the Indus in 1839. More recently it has been carefully examined by Dr. H. Cook, of the Kalat Mission.

Further south, the Mula Pass has been explored by Dr. Bellew, and details respecting the Hala Mountains have been published by our Associate, Mr. A. W. Hughes, in his work on Balochistan.§ It is well known that a vast mass of information on the North-West Frontier has been brought together, after the untiring work of years, and most ably condensed and systematised by our Associate Colonel MacGregor. We heard this from himself in 1876;|| but his valuable labours are still obscured in the mists of official secrecy. Geographers also owe a great deal to another Fellow of this Society, Major-General Thuillier, c.s.i., the late Surveyor-General of India, for the publication of maps, such as those of the district of Derah Ghazi Khan (1856-59), of Bannu and Derah Ismail Khan (1856-61), and others, where not only are the physical features of the country accurately delineated, but most valuable geographical notes by the surveyors are often added. The new map of Afghanistan, by our Associate Major Wilson, which was undertaken for the India Office, at the suggestion of the Geographical Department, embodies, on a large scale, all the information that could be collected together up to the present time, and represents a vast amount of research and careful study.

* Ubi sup.

† 'Journey to North of India, overland from England,' 2 vols. 8vo., 1838.

‡ 'Narrative of Campaign of the Army of the Indus,' 2 vols. 8vo., 1840, by Dr. Kennedy. 'Diary of a March through Sind and Afghanistan,' by Rev. J. N. Allen, 8vo., 1843. 'Narrative of March of Army of Indus,' by Major W. Hough, 8vo., 1841. See also a paper on the Bolan Pass in the 'R. G. S. J.,' xii. p. 109. That eminent botanist, Dr. William Griffith, was also with the army of the Indus, and made a series of hypsometrical observations. See 'J. A. S. B.' (new series), No. xxxvii. pp. 54, 55. His journals were published in 1847-54 (5 vols.).

§ 'The Country of Balochistan,' by A. W. Hughes, 8vo., 1877.

|| See 'Proceedings R. G. S.,' Feb. 28, 1876. See also, for a list of Colonel MacGregor's works, the second edition of my 'Memoir on the Indian Surveys,' pp. 351 and 352 (note).

In his speech at our meeting, Colonel MacGregor dwelt upon our lamentable ignorance of Afghan geography. He said that the country of the Afridia, the Zaimukht, the Bangash, the Turis, of Khost, of Dawar, of the Zhob Valley, were almost to us sealed books. He added that he had made a list of seventeen important military routes from Afghanistan to our frontier, of which we have not sufficient information to enable our Government to form a sound opinion respecting their merits. He added that, in an advance on Kandahar, we should probably use the Bolan Pass, but only because we do not know any other sufficiently well.—'Proceedings R. G. S.,' vol. xx. pp. 248, 249.